



City Research Online

City, University of London Institutional Repository

Citation: Castro-Sanchez, E., Mena-Tudela, D., Soriano-Vidal, F. J. & Vila-Candel, R. (2020). Health literacy, a crucial determinant of vaccination decision-making. *International Journal of Infectious Diseases*, doi: 10.1016/j.ijid.2020.05.081

This is the accepted version of the paper.

This version of the publication may differ from the final published version.

Permanent repository link: <https://openaccess.city.ac.uk/id/eprint/24346/>

Link to published version: <https://doi.org/10.1016/j.ijid.2020.05.081>

Copyright: City Research Online aims to make research outputs of City, University of London available to a wider audience. Copyright and Moral Rights remain with the author(s) and/or copyright holders. URLs from City Research Online may be freely distributed and linked to.

Reuse: Copies of full items can be used for personal research or study, educational, or not-for-profit purposes without prior permission or charge. Provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.

TITLE: Health literacy, a crucial determinant of vaccination decision-making among pregnant women

Authors

Enrique Castro-Sánchez^{a+}, Desireé Mena-Tudela^b, Francisco Javier Soriano-Vidal^{c,d,e,f}, Rafael Vila-Candel^{g,h}

^aNIHR Health Protection Research Unit in Healthcare-Associated Infection and Antimicrobial Resistance at Imperial College London. Du Cane Road, London, W12 0NN, UK.

e.castro-sanchez@imperial.ac.uk

^bDepartment of Nursing, Faculty of Health Sciences. Universitat Jaume I. Castellón de la Plana, Castellón, Spain.

dmena@uji.es

^cDepartment of Obstetrics and Gynaecology, Hospital Luis Alcanyis, Xàtiva, Spain. Avda. Ausiàs March, 46800 Xàtiva, Spain. Tel. +34962218100; ^dFoundation for the Promotion of Health and Biomedical Research in the Valencian Region (FISABIO). Valencia, Spain;

^eDepartment of Nursing, Universitat de València. C/Jaume Roig, s/n. 46.001 Valencia, Spain. +34963864182; ^fDepartment of Nursing, University of Alicante. Spain. Cta. San Vicente del Raspeig s/n 03690 San Vicente del Raspeig – Alicante. Tel. +3496 590 3400
soriano.frauid@gva.es

^gDepartment of Obstetrics and Gynaecology, Hospital Universitario de la Ribera, Spain. Crta. Corbera km 1, 46.600 Valencia, Spain. +34962458100. Foundation for the Promotion of Health and Biomedical Research in the Valencian Region (FISABIO), Valencia, Spain;

^hDepartment of Nursing, Universitat de València. C/Jaume Roig, s/n. 46.001 Valencia, Spain. +34963864182. rafael.vila@ucv.es

***Corresponding author**

Enrique Castro-Sanchez

e.castro-sanchez@imperial.ac.uk

Tel: +44 203 313 2072

Fax: +44 208 383 3394

Dear Editor,

We read with interest the Review by Buchy et al (2020) summarising the evidence on micro (patients, healthcare workers), meso (vaccine manufacturers) and macro (wider society) determinants of influenza vaccination in pregnant women worldwide.

We agree with the authors that improvements in vaccination coverage could be gained with better training for healthcare workers about communicating the benefits of vaccination and the risks associated with influenza infection, as well as education about such benefits to pregnant women. However, education per se may be insufficient unless it is underpinned by health literacy principles. Health literacy has been defined, essentially, as the capacity that citizens have to access and make use of health information to make decisions about their health and care (Nutbeam, 2008).

Decisions to vaccinate are complex, requiring an understanding of the immune system and the pathogenesis of each microorganism, a variety of immunisation schedules, adverse events which occur at different rates and influenced by several health professionals involved in the decision-making process at different time points (Vila-Candel et al, 2016).

Our study exploring the influence of health literacy on influenza vaccination among pregnant women in Spain reflected how women with high health literacy were more likely to reject influenza vaccination than those with lower health literacy (Castro-Sánchez et al, 2018). Among the reasons for these women to reject the vaccine were feelings about its need, in isolation and compared with other immunisations, and claims of having received insufficient information. To mitigate such a gap, women with high health literacy would access a greater variety of information sources, including those promoting outlier or fringe opinions (Danchin et al, 2018; Vila Candel et al, 2016b).

The implications of this study are clear – a wide understanding by healthcare professionals of how pregnant women make decisions about vaccinations is required, including the crucial topics of women's interest and concern, which information sources they prefer to meet their needs, how they combine and integrate the evidence obtained onto explanatory frameworks, and when these frameworks are shaped by emotions and influenced by social and personal networks.

Interventions solely interested in providing evidence-focused vaccination messages to mitigate assumed information gaps, and without acting upon the determinants shared by vaccination and health literacy such as education level, self-efficacy and empowerment, are unlikely to sustainably dent existing suboptimal vaccination rates among pregnant women, disallowing them from the clinical, public health and social gains afforded by vaccination.

Funding

Enrique Castro-Sánchez is affiliated with the National Institute for Health Research (NIHR) Health Protection Research Unit in Healthcare Associated Infections and Antimicrobial Resistance at Imperial College London in collaboration with Public Health England and Imperial College Healthcare NHS Trust. He is also an NIHR Senior Nurse and Midwife Research Leader and recognises the support of the NIHR Imperial Patient Safety Translational Research Centre and the BRC.

References

Buchy P, Badur S, Kassianos G, Preiss S, Tam JS. Vaccinating pregnant women against influenza needs to be a priority for all countries: An expert commentary. *Int J Infect Dis.* 2020;92:1-12. doi: 10.1016/j.ijid.2019.12.019.

Castro-Sánchez E, Vila-Candel R, Soriano-Vidal FJ, Navarro-Illana E, Díez-Domingo J. Influence of health literacy on acceptance of influenza and pertussis vaccinations: a cross-sectional study among Spanish pregnant women. *BMJ Open.* 2018;8(7):e022132. doi:10.1136/bmjopen-2018-022132

Danchin MH, Costa-Pinto J, Attwell K, Willaby H, Wiley K, Hoq M, Leask J, Perrett KP, O'Keefe J, Giles ML, Marshall H. Vaccine decision-making begins in pregnancy: Correlation between vaccine concerns, intentions and maternal vaccination with subsequent childhood vaccine uptake. *Vaccine.* 2018;36(44):6473-6479. doi: 10.1016/j.vaccine.2017.08.003.

Nutbeam D. The evolving concept of health literacy. *Soc Sci Med.* 2008;67:2072-2078.

Vila-Candel R, Soriano-Vidal FJ, Castro-Sánchez E. Midwives, vaccines and health literacy: an underexplored relationship?. *Gac Sanit.* 2016a;30(5):403. doi:10.1016/j.gaceta.2016.05.004

Vila-Candel R, Navarro-Illana P, Navarro-Illana E, Castro-Sánchez E, Duke K, Soriano-Vidal FJ, Tuells J, Díez-Domingo J. Determinants of seasonal influenza vaccination in pregnant women in Valencia, Spain. *BMC Pub Health.* 2016b;16(1):1173. doi:10.1186/s12889-016-3823-1